

EMAS Environmental Statement of Rich. KLINGER Dichtungstechnik – Complete edition for the period 2023

Change starts in the mind

In recent years, a remarkable change occurred in the area of sustainability. This is a change in awareness which has encouraged individuals as well as companies to recognise and actively take on their responsibility towards the environment and towards their society.



Past values must now be subjected to reevaluation.

This maxim reflects the urgent need to reexamine traditional ways of thinking and acting in relation to sustainability. Companies are faced with the challenge of overcoming various crises as well as of minimising their environmental and social impact. Transpa-

Sustainability does not happen automatically

Interview with Yusuf Avci, Sustainability Manager of KLINGER Holding *Politics – Page 10*

When waste goes round in circles ...

Circular economy at KLINGER Dichtungstechnik *Waste – Page 22*

KLINGER[®] Gaja – from nature to sealing

New sealing material makes use of renewables as much as possible *Products – Page 24*

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rency and openness are crucial to maintaining the trust of employees and customers while building long-term partnerships. In the context of this transparent change, companies have begun to communicate their environmental efforts more intensely. An environmental statement is key for documenting the constant scrutinising of one's actions, but also proudly celebrates the successes already achieved. We hope that reading and pondering on this document will inspire others to take similar actions.

Change starts in the mind, but it is realised through concrete action and commitment. And that is exactly what this environmental statement is all about.

Stephan Piringer, Managing Director under Industrial Law

The management team is fully behind EMAS



In the background: KLINGER's own park on the company premises

from left to right: *Ernst Schäfer –* Technical Managing Director, *Rene Blumauer –* Technical Manager, *Barbara Köfinger –* Commercial Managing Director, *Stephan Piringer –* Managing Director under Industrial Law, *Gerhard Pawlek –* Authorised signatory, *Kurt Bussecker –* Sales Manager



Rich. KLINGER Dichtungstechnik at a glance

Introducing a traditional Austrian company with a long history.

As a subsidiary of the globally operating KLINGER Group, since 1886 the focus of Rich. KLINGER Dichtungstechnik has been on the research, development and production of high-quality static industrial seals. Our company has been run as a family business for five generations and is still based in Gumpoldskirchen, around twenty kilometres south of Vienna.

KLINGER Dichtungstechnik is a competence centre for the approximately fifty independent KLINGER companies and around sixty worldwide production, sales and service partners in the KLINGER Group. It fulfils two main tasks:

One, we are the innovation centre for the development of sealing materials and sealing solutions. And two, we are committed to making our decades of experience and our certified, high-quality services and products available to all our partners and customers. Our product portfolio includes flat sealing materials based on elastomer fibre composites (KLINGERSIL®), PTFE (KLINGER®top-chem), graphite (KLINGER® graphite laminate) and mica (KLINGER®milam).

These are used in a wide range of sectors, such as the oil, gas and energy industries, the commercial sector, the chemical industry and transport. Our products come with



For over 135 years we've been striving to be the best: We keep things flowing – without interruption.

VISION

MISSION

We want to meet the constantly changing demands in our industry, not only with **individual products**, but also with **complete solutions**. We are considered **pioneers** and **THE quality label for gaskets**, valves and technical industrial products. We are also driven by this **ambition in the digital age**. In a dynamic market, our KLINGER companies around the globe ensure that our customers keep their own quality promises at all times. This understanding, paired with a strong sense of responsibility for future generations, makes us unique.

KLINGER is a **stable** and **independent family-run** business. We see ourselves as entrepreneurs, **problem solvers** and **technology leaders** in our industry. With sovereignly operating companies and a motivating performance culture, we are a **reliable partner** for our customers **all over the world**. They deal with us on the same level and know that we guarantee them solutions, safety and service while always **taking environmental aspects** into account. We keep things flowing – without interruption.



services, including software to select the right seal, installation information, product approvals, mobile training and application advice.



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Integration made easy

Our high-level structure ensures that all ISO management systems have a common basic structure. Shared content, objectives, terms and definitions facilitate the work and help to maintain an overview of the various standards.

Our integrated management system includes quality management in accordance with ISO 9001, environmental management in accordance with ISO 14001 and the EMAS III Directive as well as occupational health and safety management in accordance with ISO 45001. It not only ensures the quality and environmental compatibility of our products and processes, but also that occupational health and safety is fully taken into account.





1886-1930

1886	Richard Klinger opens a small production facility					
	in Vienna.					
1892	Richard Klinger purchases premises for the founding					

- 1892 Richard Klinger purchases premises for the founding of the Gumpoldskirchner Maschinen- und Metallwarenfabrik.
- 1898 Patent issued for "Klingerit", the first gasket made of caoutchouc and fibres.
- 1901 Richard Klinger sets up an acetylene plant and starts producing the gas for public lighting of the municipality of Gumpoldskirchen.
- 1923 Richard Klinger invests in the public lighting infrastructure of Gumpoldskirchen.



1931–1983

1931	Conversion of the company into a public limited company
1947	New products are developed:
	"Linobest", "Linokat" and "Terakett".
1960	Klingerit 1000, a high-pressure gasket comprising a steel
	wire mesh, is developed for petrochemical applications.
1970	The number of staff increases to 1,000.
1980	The world's first high-pressure jointing sheet based on
	synthetic and mineral fibres, is developed:
	KLINGERSIL®



1984-2003

1984	Dr. Thomas Klinger-Lohr becomes Managing Director
	of the KLINGER Group.
1990	KLINGER receives a special award for its
	European approach.
1994	The first asbestos-free gaskets are developed.
1995	Rich. KLINGER Dichtungstechnik GmbH & Co KG is
	founded as the successor to KLINGER AG.
1996	The production of KLINGER®top-chem is launched.
1998	The company applies the EMAS Environmental
	Management System for the first time.
Contraction of the	



2004-2020

2004	Celebration of the 111 th anniversary and inauguration
	of the new office building.
2009	Production for the North American market is relocated
	to Gumpoldskirchen.
2011	Investments in the plant at Gumpoldskirchen:
	new boiler and raw materials depot
2015	Dr. Christoph Klinger-Lohr takes over responsibility
	for local business.
2017	New tank farm is constructed.
2018	Finished products warehouse is constructed; part of the
	production is relocated from Australia to Gumpoldskirchen
2021	Construction of RTO - regenerative thermal oxidation plant





IN BRIEF

All good things come in threes ...

... and that is why the fire drill took place on 26 September 2022 with all 3 fire brigades (Gumpoldskirchen, Guntramsdorf and Axalta) of subsection 1 of the Mödling-Industriezone section fire brigade command.

The exercise involved over seventy people from the fire brigade and the KLINGER Dichtungstechnik fire protection team. The scenario: a huge fire on the ground floor of the raw materials



warehouse, resulting in the need to rescue two employees from the completely smoke-filled hall. The fire brigade used the exercise to familiarise themselves with the special conditions on site



and to train the members of the fire protection organisation for the event of an emergency.





Environmental objectives 2021-2024

Year/Brief Description	Measures	Status	Comment
2021			
1. Keep reject rate of SIL at less than 5.0 $\%$	 Ongoing quality reviews and awareness raising of the responsible departments 	accomplished	Reject rate: 4.76 %
2. Reduction of the reject rate of TC to 4.0 $\%$	> Conversion of the manufacturing process to a different production aid	not accomplished	Reject rate: 9.82 %, Problems during the raw material conversion
3. 2m calender	> Erection and commissioning of a calender for the sheet format 4.500 mm x 2.000 mm	not accomplished	Delay in component delivery by approx. 6 months
4. Roll-out of digital quality data acquisition for SIL	> Introduction of digital quality control cards	not accomplished	Longer delivery times for electronic components
 KDT eLearning program "Sealing Technology" 	> Development and implementation of the software	accomplished	 E-Learning programme: Klinger Sealing Academy developed and introduced First webinars already completed Ongoing expansion of the modules, partially not yet completed
6. EcoVadis assessment	> Audit or validation with a targeted rating of > 55 points	accomplished	Silver medal: Assessment successful, but at 54, the target of fivty-five points is not reached
2022			
1. Reduction of the reject rate of TC to < 6.0 $\%$	> Conversion of the manufacturing process to a different production aid	not accomplished	Reject rate: 7.41%
2. 2m calender to increase energy and	> Erection and commissioning of a calender for the sheet format 4 500 mm x 2 000 mm	accomplished	Construction completed and first slabs
3. Roll-out of digital quality data acquisition for SIL	> Introduction of digital quality control cards	accomplished	All 7 desks fully assembled; roll-out
4. New finishing	> Start of construction	accomplished	Foundation work completed; procurement of components/parts started
5. SIL bio plate	> Development based on C4240	partially accomplished	Development completed; launch postponed
6. Increased employee participation	> Suggestions for improvement through SVP tours	accomplished	Minutes of SVP tours
7. EcoVadis reassessment	> Audit or validation with a targeted rating of > 60 points	accomplished	Silver medal: At 63 points, the assessment was completed successfully.
2023			
1. Reduction of the reject rate of SIL to ≤ 4.5 %	 > Employee training > Compound optimisation 	not accomplished	Reject rate: 5.10%
2. Reduction of the reject rate of TC to ≤ 6.0 %	> Conversion of the manufacturing process to a different production aid	accomplished	Reject rate: 2.69 %
 New finishing – test operations for composite panel cutting tool 	> Start of installation	accomplished	Composite panel cutting tool installed in dispatch hall; transport unit mechanically assembled; deadline not met
4. KAL 17 retrofitting	> Conversion and update to the latest safety standards	accomplished	Conversion completed; test operations not yet completed; deadline not met
5. Determination of Scope 3 CO ₂ -emissions	> Calculation of upstream CO ₂ -emissions from raw materials	accomplished	PCF for product groups KSIL and TC determined as a first approximation using a certified software tool
6. SIL bio plate – Start of marketing	 > Development finalised > Survey customer needs > Transfer to production 	not accomplished	Product data sheet created; new raw materials available; customer requirements not surveyed; transition to production not completed
7. Consolidation of all VEXAT-relevant documents	> Revision of VEXAT documents	work in progress	Delay caused by external consultant
8. EcoVadis reassessment	> Audit or validation with a targeted rating of > 63 points	partially accomplished	Silver medal awarded again at 60 points. However, the assessment criteria were tightened due to the number of employees (> 100).
9. Reorganisation of plastic film waste, pallets and solvent-containing waste	 > Recycling of plastic film > External repair of defective Euro pallets > Change of waste disposal company 	accomplished	
2024			
1. Reduction of the reject rate of SIL to $\leq 4.5~\%$	 > ongoing raw material evaluation > Compound optimisation 	Dec.	
2. Reduction of the reject rate of TC to < 4.0 $\%$	> Conversion of the manufacturing process to a different production aid	Dec.	
3. New finishing – test operations for composite panel cutting tool	> Completion of basic assembly (without printing unit)	Q1-Q2/24	
4. Continuous refinement of PCF	> Ongoing specification by suppliers and databases	Q4/24	
5. Reduced energy consumption	 > RGW merging of parallel operations (upper and lower RGW) > RGW installation of vacuum regular for automatic extraction system adjustment 	Q2/24	
6. KLINGER [®] Gaja (bio plate) – Start of marketing	> Creation of marketing material > Transfer to production > Presentation at ACHEMA	June 24	
7. EcoVadis reassessment	> Audit or validation with evaluation target silver	Q2/24	
8. Consolidation of all VEXAT-relevant documents	> Revision of VEXAT documents	Q2/24	
9. Implementation of CSRD	> Implementation of KLINGER Holding's CSRD reporting requirements	Q4/24	
10. Introduction of document management for Purchasing process	 > Finalisation of survey for ACTUAL and TARGET process > Order – Payment > Introduction of document management tool for the switch to becoming a paperless office (Purchasing process) 	Q3/24	Abbreviations: SIL = KLINGERSIL® TC = KLINGER®top-chem RGW = Recovery



Our company policy

... is clearly structured and summarises the most important points on quality, the environment and health and safety in the workplace.

Our corporate policy clearly shows what we stand for.

WE ARE COMMITTED TO THE FOLLOWING:



Consistency and change in the organisational structure

It's been demonstrated repeatedly: success is reliant on teamwork.

At the end of 2021, Barbara Köfinger took over Commercial Management from her predecessor Michael Sautter.

She and Technical Managing Director Ernst Schäfer now share the management of KLINGER Dichtungstechnik as dual heads.

The team of officers with close environmental priorities is still a successfull mix of the established and the new: Herbert Karner was appointed waste management officer, Manuel Dragosits is now the explosion protection expert and deputy fire protection officer, and Cem Karaca works as the fire protection officer. They are the new additions to our environmental team, and are all showing great commitment.

front from left to right: C. Karaca, I. Stassner, M. Dragosits back from left to right: St. Piringer, I. Deninger, T. Neumann-Hartmann, R. Blumauer

Welcome!

Organisation chart

Organisation chart for environment and safety

The question of what really matters ...

... has a slightly different answer for everyone. That's why it is important to hear and take into account as many different potential answers as possible. And that's precisely what we did when we drew up the materiality analysis.

A materiality analysis is used to identify the relevant environmental, social and governance (ESG) issues that are most important to a company and its stakeholders.

It comprises the evaluation and prioritisation of the mentioned topics based on their potential impact on the company and on stakeholder expectations and interests. This process helps companies to target their sustainability strategies and create transparent reports.

It also enables them to minimise risks, exploit opportunities and gain the trust of stakeholders. We compiled an environmental analysis of this kind in collaboration with an external company. Participants included not just employees but also customers, suppliers and interest group representatives.

The topics identified as particularly material for the organisation based on

their impact on the company and their importance for stakeholders were: energy, greenhouse gas emissions, waste and hazardous substances. These priorities point the way for future measures.

Passes every test

External audits offer companies several advantages. They can increase credibility and the trust that customers and employees place in us by confirming the effectiveness and integrity of our measures. They also help to identify potential weaknesses in internal processes, which improves risk management and prevents potential incidents.

In light of this, various external audits were carried out during the reporting period, including a check on legal safety. A legal compliance audit is a review that ensures that KLINGER Dichtungstechnik complies with all relevant legal and regulatory requirements.

It analyses internal company processes and documentation in order to ensure legal compliance and identify potential legal risks. And finally, it confirms the company's legal safety.

The EcoVadis certification was also renewed. This evaluates corporate sustainability performance based on the criteria of environment, labour and human rights, ethics and sustainable procurement. It enables our company to improve our sustainability practices and transparently presents our CSR performance to customers and employees. KLINGER Dichtungstechnik was again awarded the silver medal. And of course we made sure that our ISO management systems for the environment, safety and quality were also certified.

IN BRIEF

Stay on the safe side ...

... that's the aim of KLINGER Dichtungstechnik, including in its communication with the property landlord Klingerpark. With this in mind, the environmental and safety managers of both companies meet at regular intervals to discuss all environmental and safety-related site issues and agree the necessary measures.

from left to right: H. Stassler, Ch. Schachenhofer, St. Piringer, I. Stassner

Sustainability does not happen automatically

There's lots to do when it comes to sustainability. All the more reason to nominate a sustainability manager for the KLINGER Group. Since the end of 2023, Yusuf Avci's responsibilities have included KLINGER Holding's environmental agendas. We asked the newly appointed Sustainability Manager for an interview and talked about the Sustainability Reporting Directive (CSRD) frequently mentioned in the media.

Mr Avci, in brief, what does the abbreviation "CSRD" stand for?

The Corporate Sustainability Reporting Directive (CSRD) is an initiative of the European Union that aims to present and improve the transparency and consistency of corporate sustainability reporting. This directive obliges a large number of companies to disclose detailed information about their sustainability practices.

To what extent is the CSRD relevant for KLINGER Dichtungstechnik?

The CSRD significantly expands existing rules on non-financial reporting. This makes it relevant for all subsidiaries of the KLINGER Group, because we perform sustainability reporting across the Group and all required information is consolidated in a joint report. The KLINGER Group has set itself the goal for in 2024 and 2025 of gradually implementing sustainability reporting and applying the sustainability regulations in accordance with the Corporate Sustainability Reporting Directive (CSRD), in order to then be able to publish the mandatory reporting in 2026. This means that in future, KLINGER Dichtungstechnik will have to collect certain information, such as environmentally relevant key figures, and make this available for Group-wide reporting.

Do you see any initial advantages for EMAS companies in implementing the CSRD?

The EMAS and ISO 14001 environmental management systems form essential building blocks in sustainability reporting and create a sound basis. EMAS organisations maintain an open dialogue on environmental issues by publishing an environmental statement and updating it annually. In this report, they present all relevant environmental impacts as well as the extent to which they have achieved the environmental targets they have set themselves. They involve employees and include them in the process of continuous improvement. EMAS environmental statements are particularly suitable for sustainability reporting and presenting the ecological aspects of sustainable management. This existing basic data provides immense initial advantages in all report formats. Content that goes beyond the minimum requirements of the EMAS Regulation can also be validated.

Apart from the CSRD, what do you see as the next challenges for EMAS companies?

EMAS registration requires a real improvement in environmental performance. This means that EMAS organisations are ambitious environmental and climate protectors. Core indicators illustrate these improvements. The EMAS requirement to publish an environmental statement should not be understood to mean that a glossy report must be produced and printed. One of the challenges lies in raising awareness among the workforce. Rather, everyone involved must have the necessary motivation to work together to identify and remove obstacles. These are the conditions under which environmentally aware behaviour can succeed. I can only appeal to all business leaders: Make your company a pioneer in environmental protection and actively campaign for a clean future. I believe that the current economy cannot continue as it has. Energy and resource efficiency will be of crucial importance in the future. In future, EMAS companies will face the challenges of the eco-efficient orientation of companies, which will become a strategic competitive advantage.

Holding Sustainability Manager Yusuf Avci

IN BRIEF

Performance is key

KPIs enable companies to measure their performance objectively. They provide clear, measurable indicators of how well a company is performing, e.g. in the area of energy efficiency.

In our last full environmental statement, we reported on the introduction of a short monthly report on electricity, gas and water consumption entitled "A picture is worth a thousand words". This has since been developed further and now provides even more information. In addition to absolute consumption figures, which were already included in the last report, alongside comparisons with other periods, the report now also shows key figures. Consumption is set in relation to a base such as production volumes or solvent consumption. Relative KPIs are helpful for observing trends over time and evaluating the effectiveness of measures. Relative environmental indicators provide a clearer and more useful perspective on our company's environmental performance by putting figures into a relevant context and creating opportunities for comparison.

drawn by Isabella Müller (Sales)

What do wine and gaskets have in common?

Alcohol! KLINGER Dichtungstechnik is switching from fossil to bio-based ethanol, thereby saving around 100 tonnes of CO₂ per year.

Stephan Piringer at the ethanol tank

If you've ever been annoyed by chewing gum sticking to the sole of your shoe, you will be aware of the issues with sticky rubber. When rubber compounds are used to manufacture gaskets, a similar problem applies. To be able to transport, store and handle them without leaving any residue, the surfaces must be 'passivated'. This is achieved by using alcohol, or more precisely: ethanol. This processing aid forms part of a circuit during the production of gaskets. However, despite the utmost care, small losses still occur, for example with waste. Additional purchases are needed to compensate for these losses.

Until now, we have purchased ethanol from fossil sources. At the beginning of August 2023, however, KLINGER Dichtungstechnik switched to a sustainable option: bioethanol, sourced from an Austrian manufacturer. This allows us to avoid any exploitation of developing and newly industrialising countries and any misuse of their agricultural land otherwise used to grow food. The bioethanol is obtained in a particularly environmentally friendly way from wood processing waste – biological and chemical processes convert the cellulose into ethanol. Only wood waste from sustainably managed Austrian forests, which further improves the environmental balance.

No tree is felled just to produce bioethanol. In this instance, we benefit exclusively from the efficient utilisation of residual materials and at the same time promote regional value creation.

IN BRIEF

Water as a driving force

Together with our property landlord Klingerpark, we also ensure environmental compatibility when purchasing electricity and only buy electricity from 100% hydropower. An independent auditor regularly confirms that water alone is the driving force behind our electricity.

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Raw material use

Section of the KLINGERSIL raw materials storage hall

Energy flows

* Post combustion unit

** Regenerative thermal oxidation plant

Waste-relevant process chart KLINGERSIL®

Waste-relevant process flow chart KLINGER®top-chem

Input	Main process	Auxiliary processes	Output
Raw materials, in-process fluids	Goods receipt and storage		
	+	M	- - - - - - - - - -
Raw materials	Batch preparation	ī	Empties, packaging, aspirated dusts, pallets
	ŧ	t	
Raw materials, water, electricity	Mixing	n	Cooling water, aspirated dusts, mixed wastes
	ŧ	a n	
PTFE compounds, electricity	Shaping	C e	Jointing sheets, sheet cuttings
Jointing sheets, natural gas, electricity, paraffin	↓ Thermal treatment	/ A	Water, combustion gases, heat
Heat		Heat recovery d m	Heat
Natural gas, hydrocarbons	+	PCU/RTO i	CO_2 , NO_X , organic carbons
Jointing sheets	Shaping	i	Sheet wastes
Printing ink jointing sheets	+	ť	
electricity	Cutting and printing	ra	Printing colour wastes, sheet wastes
	+		
electricity, water	Lab testing	0	Test fluids, cooling water, samples
	+	"	
Packaging materials	Packaging		
	+		
	Delivery	L	→ Waste oils, metal waste, paper

New storage

Making the safe storage of hazardous substances even safer ...

... was our aim during the last depot conversions.

The former depot for hydrochloric acid, a substance required for neutralisation in the wastewater treatment process, had seen better days and has now been replaced by a new depot. The latter has a larger storage capacity and is also suitable for IBCs. For a long time, there was only one single gas cylinder store for the compressed gases used at the site. A second store has now been installed, enabling shorter critical transport routes and thus minimising the risk of accidents; in addition, only inert gases are now stored in one of the two gas cylinder stores, which increases safety at this location. In the event of a fire, aerosol cans pose a particular hazard.

For this reason, at KLINGER Dichtungstechnik they are stored in specially designed fire-resistant hazardous materials cabinets. These may only be used to store aerosol cans, because here too we play it safe.

Newly designed depots for hazardous substances

		Significant direct environmental aspects														
Areas/ plants	Society	Hazardous waste	Non-hazardous waste	Air	CO ₂ -footprint	Water	Soil	Noise	Odour	Soil consumption	Environmental risk	Energy efficiency	Material efficiency – raw materials	Material efficiency – efficiency	Water consumption	Sum of direct environmental aspects
Calendering SIL	_	4	5	2	_	5	_	_	1	3	5	5	5	3	5	43
Steam production	_	_	_	5	5	3	_	2	1	1	3	5	-	_	3	28
Mixing SIL	_	5	_	2	_	_	1	_	1	2	3	3	5	4	_	26
Solvents Ethanol recovery	_	_	1	3	_	2	_	_	1	_	5	5	-	4	3	24
Solvents Toluene recovery	_	_	1	3	_	_	_	_	1	_	5	5	-	4	2	21
PCU (Topchem)/RTO	_	_	_	4	2	_	_	2	2	_	5	5	_	-	-	20
Cooling water circuit	2	_	_	_	_	5	_	3	_	_	4	_	_	_	5	19
)irect environmental aspects in conno	etion with	lowe vib	ratione vie		aranco an	d rogiona		woro anal	weed and	found to k	a not on					

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	Significant direct environmental aspects													
Areas/ plants	Raw materials sustainability	Transport	Environmental aspects product: Storage/packaging	Environmental aspects product: Transport/shipping	Environmental aspects product: Use phase	Environmental aspects product: Secondary use phase	Capital investment	Insurance services	New markets	Selection and composition of services	Administration and planning decisions	Composition of the product offer (TA Air 75 %)	Environmental performance of (sub)contractors/(sub)suppliers	Sum of indirect environmental aspects
Purchasing	2	4	3	3	_	_	_	_	_	4	_	_	4	21
Sales	_	_	1	2	3	2	_	_	2	_	1	4	_	15
Product development	4	_	_	_	4	3	_	_	_	_	_	3	_	14
Product testing	_	_	_	_	5	-	_	_	_	_	1	1	_	7
Controlling	_	_	_	_	_	_	3	1	_	_	2	_	_	6

Indirect environmental aspects in connection with energy sources/sustainability as well as mobility/employees were analysed and found to be not applicable.

5 ... significant impact on environmental performance

- ... negligible impact on environmental performance

Leaking solvents ...

IN BRIEF

... was the scenario explored by the fire drill on 25 September 2023.

The driver of a forklift truck had damaged a container with 1,500 litres of solvent, which spread over a large area. The solvent had to be prevented from entering the sewerage system, and injured persons had to be rescued. The operation was made more difficult by the fact that the solvent vapours had created an "explosive zone" that did not allow the use of conventional tools. The exercise, which lasted around two hours, involved 35 people from the Gumpoldskirchen volunteer fire brigade and the KLINGER Dichtungstechnik fire protection team.

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Switch to efficient extraction pipes in the rolling mill

... saves costs and reduces labour.

In our endeavours towards sustainability and efficiency, we recently replaced the ageing extraction pipes in all the calenders in our rolling mill. This measure offered several advantages: The new pipes improve dust and pollutant extraction, and this in turn positively impacts on air quality for our employees and the environment. In addition, the lower resistance and new vacuum-guided extraction control system save further energy for our extraction motors. By optimising the positioning of the extraction openings, we increase the extraction volume, thereby effectively recovering our solvents. In addition, all the stone filter pots in the old systems were replaced with tried-and-tested modern filter systems with filter bags.

Extraction pipes

USE OF LAND 2023*	
Built-up areas	15.538 m ²
Transport areas	15.320 m ²

* Transport areas are calculated using a defined key. Non-built-up areas are not unter the authority of Rich. KLINGER Dichtungstechnik GmbH & Co KG.

View of KLINGER Dichtungstechnik

Focus on sustainable mobility: our switch to electric and hybrid vehicles

With its vehicle fleet, KLINGER Dichtungstechnik sets a clear signal for environmental protection and sustainability.

In recent years, of our seven company vehicles, we have converted three to electric cars and one to a hybrid vehicle. We have also installed wall boxes for the electric cars to ensure convenient and efficient charging.

But that's not all, by any means: 100% of the electricity that powers our electric

cars comes from hydropower. The decision to switch to electric and hybrid vehicles is based on our conviction that sustainable mobility plays a key role in reducing greenhouse gas emissions. Electric vehicles produce no direct emissions during their use and therefore make a significant contribution to improving air quality. By utilising electricity

from 100% hydropower as a power source for our electric vehicles, we further enhance this positive effect.

With these measures, we are actively helping to reduce CO₂ emissions and contribute towards protecting our environment.

IN BRIEF

Reporting is mandatory

A number of reporting obligations to the authorities must be complied with.

Every year, KLINGER Dichtungstechnik submits numerous data and documents to the relevant authorities in order to meet these reporting obligations.

In 2023, these included:

- Solvent balance
- Emissions declarations
- Process wastewater Indirect dischargers
- Hazardous goods report
- Annual balance sheet Poison
- Packaging Ordinance Own importer
- ARA licensing

Pond in KLINGER park

1. TCA 764 – Supersorbon adsorber unit			
Gas volume treated: TVOC:	Max. output 35,000 m ³ /h Limit value 100 mg/m ³	Measurement value 28,000 m³/h Measurement value 45 mg/m³	Review on/ by: MAPAG* 17/05/2021
2. TCA 4509 – Sorboblock adsorber unit			
Gas volume treated: TVOC:	Max. output 30,000 m³/h Limit value 100 mg/m³	Measurement value 23,000 m³/h Measurement value 7 mg/m³	Review on/ by: MAPAG* 18/05/2021
3. Boiler house			
Boiler 3 (nominal load 6,557 kW) CO NO _X Boiler 4 (nominal load 3,934 kW) CO	Limit value 80 mg/m ³ 100 mg/m ³ 80 mg/m ³	Measurement value 2 mg/m ³ 76 mg/m ³ 25 mg/m ³	Review on/ by: MAPAG* 19/06/2023 MAPAG*
NO _X	100 mg/m ³	77 mg/m ³	19/06/2023
4. Post combustion unit (PCU)/Regenerative thern	nal oxidation plant (R	TO)	
RTO NO _X CO TVOC	Limit value 100 mg/m ³ 100 mg/m ³ 20 mg/m ³	Measurement value 4 mg/m ³ 2 mg/m ³ 2 mg/m ³	Review on/ by: MAPAG* 20/06/2023
PCU 2 NO _X CO TVOC	100 mg/m³ 100 mg/m³ 20 mg/m³	36 mg/m ³ 36 mg/m ³ 4 mg/m ³	MAPAG* 21/06/2023
5. Dust emissions			
No environmentally relevant dust emissions thanks to Number of measuring points 2023: 3 Result: Limit values met	the use of targeted extr	raction and filter systems.	Review on/ by: MAPAG* 19. + 20/06/2023

6. Wastewater

Cooling water (direct dischargers)

Cooling water from our calender top rollers is channelled into the boundary trench via heat exchangers for waste heat recovery. The volume is heavily dependent on capacity utilisation and is approx. 569 m³/d over the year.

Process wastewater (indirect dischargers)

The process wastewater from the recovery system is cleaned by an activated carbon filter and then channelled into a collecting tank together with the boiler wastewater. The overflow continues through an automatic neutralisation section and is then discharged into the municipal sewer system of the market town of Gumpoldskirchen.

Review on/ by: MAPAG* 24/10/2023

Result: Limit values met

* accredited testing and inspection body

Circular economy - when waste goes round in circles ...

... this is entirely in line with KLINGER Dichtungstechnik's philosophy, because the circular economy is the future.

Fortunately, the days when waste was simply dumped are long gone. The Waste Management Act clearly regulates the handling of waste:

The principle of avoidance, reuse and recycling applies – in precisely that order. If it is not possible to comply with this principle because of the type of waste being handled, the waste should be utilised in another sensible way, e.g. through energy recovery. Landfill is only the very last option, if a specific type of waste cannot be used at all. The circular economy follows this principle as well, by keeping materials and products in the cycle for as long as possible through reuse. This extends the life cycle and conserves valuable resources.

KLINGER Dichtungstechnik also endeavours to constantly improve its handling of waste and to follow the principle of the circular economy. Since 2022, for example, damaged Euro pallets are no longer simply disposed of as wastewood, but handed over to a company that repairs them and returns them to the Euro pallet cycle. Even disposable pallets, which, as their name suggests, are only used once, can be returned as pallets if they are in good condition and can still be used as loading aids. This requires our forklift driver and waste officer to be constantly on the lookout, and to carefully keep pallets separate from the wastewood, collect them separately and report as soon as there are enough of them ready for collection. In this way, we save more than 10% of our previous waste in wood packaging every year.

KLINGER Dichtungstechnik has been collecting its plastic films separately for some time now so that they can be recycled. In 2022, our waste disposal company at the time informed us that it would no longer be sending them for recycling in the future as it was not prepared to carry out the necessary pre-sorting. As this was not possible internally at KLINGER, another solution was needed. After a few comparisons, we found a committed waste disposal company that made the pre-sorting possible and has helped us to keep the plastic film in the cycle as a recyclable material to this day.

The utilisation of our waste oil is also a good example of a sensible circular economy, as it is recycled and processed into base oils that are as good as new. This conserves the

world's oil reserves and means lower CO_2 emissions, as the process of recycling used oil requires fewer steps and therefore less energy than the production of new oil.

We also contribute to sustainability with our reclaimed materials, some of which are created during our production process and some of which come from our customers' punching waste. By adding the regenerates to the compounds for our gaskets, we reduce the amount of waste and conserve resources.

Every single circular economy measure contributes to environmental and climate protection and is particularly important for KLINGER Dichtungstechnik as an EMAS company.

Waste management

Type of waste	Waste code number	2019	2020	2021	2022	2023
	ÖNORM S 2100	in t				
Non-hazardous waste						
Wooden packaging material	17201	80.03	92.14	83.06	65.02	67.97
Plastic foils	57119	17.55	18.76	12.72	3.74	25.22
Iron and steel scrap	35103	19.06	24.15	12.21	32.42	28.49
Wastepaper, paper, cardboard	18718	44.79	24.53	53.2	52.57	51.98
Rubber (jointing sheet cut-offs)	57501	123.88	143.42	146.64	156.78	142.57
Municipal waste and similar commercial wa	aste* 91101	24.28	26.82	25.98	26.84	27.33
Miscellaneous (total volume of non-hazardo fractions < 5 % in the 2023 reporting year)*	bus * n. a.	5.73	7.12	3.54	11.15	11.36
Total non-hazardous waste		315.32	336.94	337.35	348.52	354.92
Hazardous waste						
In-process fluids containing solvents	55404	120.85	116.18	137.61	134.43	114.40
In-process sludge containing solvents	55402	8.49	8.61	5.65	9.71	9.92
Miscellaneous (total volume of hazardous fractions < 5 % in the 2023 reporting year)*	* n. a.	18.07	13.95	15.09	13.10	18.93
Total hazardous waste		147.41	138.73	158.35	157.24	143.25
Total annual waste volume		462.72	475.67	495.70	505.76	498.17
Relative waste volume*** (%)		17.15	17.82	16.16	15.02	15.68

Determined by conversion

 ** From environmental statement 2023 adaptation of the waste management table: listing of all fractions, i.e. including small quantities; if < 5% in relation to reporting year, summarised under 'Miscellaneous'
 *** Indicator referred to jointing sheets sold

Waste and recycling collection point

KLINGER[®] Gaja – the renewable sealing material

KLINGER Dichtungstechnik is introducing KLINGER[®] Gaja, a new sealing material from sustainable raw materials. KLINGER[®] Gaja is not just another sealing material – it is proof of our commitment to sustainability that extends beyond the boundaries of our company.

We started our latest product development by calculating the CO_2 footprint of our existing sealing materials. It became apparent that a sizeable proportion of CO_2 emissions are caused by the purchase of raw materials alone, i.e. within Scope 3. This made it clear to us that a new sustainable product must consider raw materials early on to determine their CO_2 footprint and the use of alternative raw materials, primarily renewables.

The raw materials for KLINGER® Gaja have been carefully selected for their sustainable properties to ensure that the impact on the environment is minimised at source. KLINGER® Gaja contains the largest possible number of renewable raw materials, e.g. natural rubber, which is obtained from the latex of the rubber tree. Organic and renewable cellulose fibres are also used. Another raw material is biologically circulating silica, which is obtained from rice husks. In contrast to many other projects with environmental relevance, this one did not start within our immediate organisational boundaries, but well before that in the supply chain. In addition to a strong focus on the sustainability of

our processes, we have now also realised our responsibility towards the environment directly in a product.

In addition, at KLINGER[®] Gaja we deliberately avoid the use of colour pigments or mineral oils in order to prevent unnecessary environmental pollution. With these well thoughtout decisions, we prove that sustainability does not have to come at the expense of performance or aesthetics.

KLINGER[®] Gaja provides companies that value sustainability with an environmentally conscious sealing solution without compromising on performance. By reducing their carbon footprint and using environmentally friendly alternatives, they are helping to stop climate change.

The use of KLINGER[®] Gaja not only benefits the environment, but also improves the brand image of companies. As consumers increasingly favour environmentally friendly products, companies that use sustainable solutions like KLINGER[®] Gaja stand out as pioneers in their industry, driving positive change and inspiring others to follow their lead.

At KLINGER Dichtungstechnik, we recognise the importance of supporting environmental, social and governance (ESG) initiatives. Our company is proud of these values and embodies our commitment to responsible business practices that benefit both people and the environment.

www.klinger.co.at

From head to foot print

The Product Carbon Footprint (PCF) is a key indicator of the environmental impact of our products. It indicates all CO_2 emissions during a defined period of a product's life. Customers are increasingly demanding such information about our products.

CO₂ emissions are inevitably released during the production of our sealing materials.

On the one hand, this happens within our company, for example through the operation of our steam boilers, but on the other hand, CO_2 is also released during the production of the raw materials we deliver to our suppliers, such as rubber and fibres.

In order to determine the PCF of products in full, it is necessary to add all emissions that have been emitted by upstream suppliers to internal emissions. For this use case, all emissions are totalled from the cradle of the raw materials to our factory gate. Figuratively speaking, this is known as the "cradle-to-gate" footprint. What happens to the gaskets after our factory gate varies to such an extent that we cannot determine the CO_2 produced there. In a long-running project, we have collated a lot of information about CO_2 emissions in the production of our raw materials and combined it with our data to create a PCF.

In a first step, a general PCF range for the KLINGERSIL® products and a further general PCF range for KLINGER® top-chem were calculated with the aid of special software. The data on the PCF is very dynamic and our calculations will therefore be periodically updated in future.

This packs a punch!

KLINGER Dichtungstechnik products have been packaged almost entirely without plastics for some time now. One last gap has now also been closed.

When our gaskets leave the factory in Gumpoldskirchen, they sometimes embark on a long journey to our customers. Some of our products are shipped to users around the world by road, rail, water or air. To ensure that the goods are not damaged during this journey, they are packaged robustly. We have always taken care to avoid the use of plastics.

KLINGER Dichtungstechnik uses pallets and crates made of wood, edge protectors made of cardboard, packaging material made of wrapping paper, etc. However, PE film was used as an intermediate layer for particularly high-quality gaskets. In order to close this last gap, we also switched to packing paper. It goes without saying that this comes from "Wald-TÜV" certified sources, i.e. it is FSC and PEFC certified. This change will save around 2 tonnes of plastic packaging per year and replace it with renewable raw materials.

Packing paper instead of film as an intermediate layer

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Full power for less energy

In this interview, Rene Blumauer (Technical Manager) explains how KLINGER Dichtungstechnik saves energy and increases efficiency at the same time through innovative projects. He reveals the ideas and challenges behind the successful energy-saving projects. Discover how targeted measures can not only reduce consumption, but also cut costs in the long term.

In your opinion, which technical measures have contributed most to increasing energy efficiency in the last three years?

Over the past few years, energy efficiency measures have been implemented, particularly in the area of our calendering shop and solvent recovery plant. In the calendering shop, we have renewed our extraction pipes and filter stations, which has led to a significant improvement in extraction performance and lower power consumption by the electric motors. Additional vacuum control keeps the extraction power and the frequencycontrolled motor speed in the optimum range. A further increase in energy efficiency was possible by optimising adsorber attenuation times. This was achieved by continuous monitoring of the clean gas values and an automated control system. The steaming times and the associated steam consumption were reduced by 20%.

Which current energy-saving projects are you involved in?

A currently ongoing and very important project is the temperature increase in the heating circuit and the feed water preheating. The aim of this project is to convert already consumed and actually useless anergy back into high-quality and, above all, cost-free exergy. The waste heat from our recovery system is transferred to the existing heating system. The energy gained in this way can be saved 1:1 in the steam boiler.

What new technologies do you use to support these projects?

We use state-of-the-art measuring systems and probes, and we also use our specially programmed SCADA system to analyse and monitor our processes. This allows us to query several thousand data points and track them live.

Where do you think there is potential for further energy savings?

I see potential above all in the continuous improvement of existing processes, but also in the implementation of new technical solutions. This not only reduces costs and expenditure, but also makes an important contribution to environmental protection and the careful use of resources.

What is your recommendation to readers for saving energy in the home?

Any kind of energy saving makes sense and is good for the environment. The best energy savings are those that lead to an improvement in the quality of living. This can be achieved, for example, by intelligently controlling the shading or LED lighting. Nowadays, technical aids are easy to retrofit and are not only in great demand for new builds.

Interview with Rene Blumauer

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ELECTRICITY CONSUMPTION IN 2023

kWh	%	
11,294	0.35	Purchasing/warehouse
38,868	1.20	Laboratory
45,734	1.42	Personnel administration
8,257	0.26	Maintenance
309,608	9.58	Compressed air
240,192	7.43	Boiler house
9,284	0.29	Laboratory techn.
344,831	10.67	Mixing
981,237	30.37	Calendering
18,507	0.57	Finishing
36,540	1.13	Ethanol recovery
591,122	18.30	Toluene recovery
54,430	1.68	Mixing – Topchem
400,079	12.38	Calendering – Topchem
92,559	2.87	Furnaces – Topchem
15,110	0.47	Management
32,925	1.02	Packing
3,230,575	100.00	Total consumption

WATER CONSUMPTION IN 2023

m ³	%	
1,119	0.70	Boiler house
143	0.09	KM mixing
144,957	90.58	Calendering
13,811	8.63	Ethanol recovery
2	0.00	Toluene recovery
160,032	100.00	Total consumption

	GAS CONSUMPTION 2023				
Nm ³	%				
1,013,629	84.96	Boiler house			
178,303	14.94	Topchem			
1,198	0.10	Third-party consumption			
1.193.130	100.00	Total consumption			

	2019	2020	2021	2022	2023
Raw material use (t)	3,078	3,062	3,505	3,892	3,677
Water consumption (m ³)	130,009	131,532	151,190	162,418	160,032
Natural gas (MWh)	16,071	16,448	17,483	16,852	13,481
CO ₂ emissions from natural gas (t)	3,897	3,988	4,201	4,050	3,028
Electrical energy (MWh)	3,130	3,142	3,285	3,535	3,231
CO ₂ emissions from electricity generation (t)	0	0	0	0	0
Total energy (MWh) ²	19,201	19.590	20.768	20.387	16.712
			CO₂ equivalent ¹	CO ₂ emissions	
1 Source of data: UBA 2024 "Total emission factor".		Erdgas	2.54 kg/Nm ³	3,028 t	

2 Sum of natural gas and electricity

Pond in KLINGER park - supplied by cooling water

Comment

Firstly, inputs should be considered when commenting on the environmental indicators. Particular attention should be paid to relative electricity and gas consumption.

We have reported on various energy efficiency measures in this and previous issues of the full environmental statement. These made a significant contribution to reducing the amount of energy used in relation to the quantity produced. This is evident for both electricity and gas. Raw material consumption, on the other hand, is primarily determined by order volume and product structure. The use of regenerated material remains constant at around 14%.

During the reporting period, we were unable to win any further customers for our gaskets to take back punching remnants. On the other hand, the technical amount of reclaimed material used is also limited on the product side and cannot be increased at will.

The indicators on the output side are analysed below.

In line with the reduced relative use of natural gas described above, both \mbox{CO}_2

emissions and NO_X emissions have fallen continuously over the last three years. The quantities of solvents emitted are mainly based on production volumes. There are no recognisable trends here. Water consumption is also directly related to production volumes.

A substantial proportion of water consumption is used for cooling purposes. In this context, an increase in average temperatures is to be expected. The waste generated in the reporting period is at a constant level compared to previous reporting years.

a) INPUT: Raw materials, regenerates, electricity, gas

Regenerates are only used at KLINGERSIL® 450 400 350 300 250 0.148 200 0.144 0 139 0.142 150 0 137 100 50 0 2019 2020 2021 2022 2023 Regenerate (t) Indicator: Regenerate/produced quantities (t/t)

Electricity consumption (GWh)

Gas consumption (Nm³)

Environmental indicators

b) OUTPUT: Waste, water, CO_2 , solvent emissions, NO_X

Water consumption (m³)

CO₂ emissions (t)

Solvent emissions (t)

Solvents are only used at KLINGERSIL®

Indicator: Solvent emissions/produced quantities KLINGERSIL® (t/t)

2,000 0.46 1,800 0.42 0.40 1,600 0.37 1,400 1,200 0.26 1,000 800 600 400 200 0 2019 2020 2021 2022 2023 ■NO_x Boiler (kg) NO_x TNV (kg) Indicator: NO_x/produced quantities (g/kg)

Comment re. 2020: No data of RTO available as not yet in productive operation Comment from 2021: RTO data considered for "NO_X TNV [kg]"

NO_X emissions (kg)

KLINGER picture - Get searching!

The picture below contains five errors or differences. Who can find them?

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KLINGER crossword puzzle

The answers to this riddle can also be found in the articles in the environmental statement.

- 1. Where did Richard Klinger acquire a plot of land in 1892?
- 2. We are committed to protecting ...
- **3.** What is the name of the new sealing material with the greatest possible proportion of renewable raw materials?
- 4. What was converted from fossil to bio-based origin in 2023?
- 5. We obtain our electricity from 100% ...
- 6. What kind of economy requires fewer raw materials, produces less waste and fewer emissions?
- 7. What sustainable intermediate layer do our high-quality gaskets have?
- 8. With whom do we regularly conduct fire drills?

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VERIFIER'S STATEMENT

Dipl.-Ing. Dr. Kurt Kefer, chief EMAS environmental verifier and authorised signatory of the environmental verifier organisation

TÜV SÜD Landesgesellschaft Österreich GmbH,

Franz-Grill-Straße 1, 1030 Wien [registration number AT-V-0003]

declares to have verified whether the site(s) or the entire organisation as indicated in the environmental statement of the organisation

Rich. KLINGER Dichtungstechnik GmbH & Co KG

Am Kanal 8–10, 2352 Gumpoldskirchen with registration number AT-000096

meet all requirements of Regulation [EC] No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme [EMAS], as amended by Regulation [EU] No 2017/1505 and No 2018/2026.

By signing this declaration, I declare that

- the verification and validation have been carried out in full compliance with the requirements of Regulation [EC] No 1221/2009, as amended by Regulation [EU] No 2017/1505 and No 2018/2026,

- the outcome of the verification and validation confirms that there is no evidence of non-compliance with applicable legal requirements relating to the environment,

- the data and information of the environmental statement of the organisation reflect a reliable, credible and correct image of all the organisation's activities within the scope of the environmental statement.

This statement cannot be equated with an EMAS registration. EMAS registration can only be carried out by a competent body in accordance with regulation No 1221/2009. This statement shall not be used as a stand-alone basis for informing the public.

The environmental verifier organisation **TÜV SÜD Landesgesellschaft Österreich GmbH** is accredited for NACE code 23.99 by decision of the Federal Ministry of Sustainability and Tourism (previously: Agriculture and Forestry, Environment and Water Management).

Landesgesellschaft Österreich Gumpoldskirchen, on 28. 08. 2024

af Kila

Chief environmental verifier and authorised signatory of TÜV SÜD Landesgesellschaft Österreich GmbH Franz-Grill-Straße 1, 1030 Vienna

The environmental statement will next be validated in 2025.